

REMARKS

I. General

Claims 1-38 were pending in the present application. All of claims 1-38 are rejected in the current Office Action (mailed January 16, 2007). The current Office Action raises the following issues:

- The disclosure is objected to for informalities;
- Claims 32-35 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter; and
- Claims 1-38 are rejected under 35 U.S.C. §102(e) as being anticipated by published U.S. Patent Application No. 2002/0152305 to Jackson et al. (hereinafter "*Jackson*").

In response, Applicant respectfully traverses the outstanding objections and claim rejections, and requests reconsideration and withdrawal thereof in light of the amendments and remarks presented herein.

II. Amendments

In the Specification

The specification is amended to update the information for the referenced patent applications.

In the Claims

Claims 1, 6, 11, 16, 18, 23, and 32-35 are amended herein, claims 5, 15, 17, and 22 are canceled without prejudice, and new claim 39 is added herein. No new matter is added by these amendments and newly added claim.

Independent claim 1 is amended herein to include the elements originally presented in dependent claim 5, which depended from claim 1. Thus, claim 1 is amended to effectively rewrite dependent claim 5 in independent form as claim 1. This amendment is not intended to narrow the scope of original claim 5 in any way. In view of this amendment, claim 5 is

canceled without prejudice. Also, claim 6 is amended to depend from claim 1, rather than from the now-canceled claim 5.

Independent claim 11 is amended herein to include the elements originally presented in dependent claims 15 and 17. Thus, claim 11 is amended to effectively rewrite dependent claim 17 in independent form as claim 11. This amendment is not intended to narrow the scope of original claim 17 in any way. In view of this amendment, claims 15 and 17 are canceled without prejudice. Also, claim 16 is amended to depend from claim 11, rather than from the now-canceled claim 15.

Independent claim 18 is amended herein to include the elements originally presented in dependent claim 22. Thus, claim 18 is amended to effectively rewrite dependent claim 22 in independent form as claim 18. This amendment is not intended to narrow the scope of original claim 22 in any way. In view of this amendment, claim 22 is canceled without prejudice.

Independent claim 23 is amended herein to recite “determining, based at least in part on a modeled memory state of the shared resources, a cost to the one of the hosting services for serving the requested streaming file” (newly added language shown underlined). Support for this amendment can be found throughout the specification, including for example paragraph 0059 of the specification.

Claims 32-35 are amended herein. No new matter is added by these amendments. The amendments to claims 32-35 are not intended to narrow the scope of those claims in any way, but are instead intended as a mere cosmetic change that changes the wording of the claim without narrowing the scope of the claims. The current Office Action asserts that claims 32-35 were improper because they were directed to “software that is not implemented on a computer-readable storage medium”. Page 2 of the Office Action. Applicant respectfully disagrees, as claims 32-35 clearly recited “Computer-executable software stored to a computer-readable medium” (emphasis added).

The Office Action appears to further contend (on pages 2-3 thereof) that claims 32-35 recite descriptive material per se. Applicant again disagrees and asserts that the rejected language of claim 32, for example, which recited “Computer-executable software stored to a

computer-readable medium”, clearly recited that the software code is executable by the computer (i.e., “computer-executable”) for performing the actions recited. As such, these claims are not directed to mere descriptive material.

However, to advance prosecution of this application, Applicant has amended the wording of claims 32-35 in a manner that does not narrow their scope in any way, but rather merely restates in a different way that the code is executable by a computer to cause the computer to perform the recited actions. For instance, claim 32 now recites “Software code stored to a computer-readable medium, which when executed causes a computer to perform a method comprising: ...”. Thus, the modified wording of the claim is not believed to narrow the scope of the claim, but rather merely states in a different way that the code is computer-executable.

III. Objection to Specification

In view the above amendment to the specification to provide the related application data, Applicant respectfully requests that this objection be withdrawn.

IV. Rejections Under 35 U.S.C. §101

As explained above, Applicant respectfully disagrees with the Examiner’s assertion that claims 32-35 were directed to non-statutory subject matter. And, as discussed above, the non-narrowing amendment to those claims is intended to illuminate for the Examiner that these claims are directed to proper statutory subject matter. Therefore, Applicant respectfully requests that the rejection of claims 32-35 under 35 U.S.C. §101 be withdrawn.

V. Rejections Under 35 U.S.C. §102(e) over *Jackson*

Claims 1-38 are rejected under 35 U.S.C. §102(e) as being anticipated by *Jackson*. To anticipate a claim under 35 U.S.C. § 102, a single reference must teach every element of the claim, *see* M.P.E.P. § 2131. Applicant respectfully submits that claims 1-38 are not anticipated by *Jackson* because *Jackson* fails to teach each and every element of the claims, as discussed further below.

Independent Claim 1

Independent claim 1, as amended herein, recites:

A method for managing admission of requests to a shared media server, the method comprising:

allowing each of a plurality of hosting services access to any of a set of shared resources for serving their respective streaming files to clients, wherein said set of shared resources comprises memory; and

managing admission of client requests for streaming files to each of the plurality of hosting services to ensure that a desired amount of usage of the shared resources is available to each hosting service, wherein said managing admission of client requests for streaming files comprises:

receiving a client request for a streaming file to be served from one of said hosting services; and

using a segment-based memory model to determine whether at least a portion of the requested streaming file is in the memory. (Emphasis added).

Jackson fails to teach at least the above-emphasized element of claim 1. That is, *Jackson* fails to teach using a segment-based memory model to determine whether at least a portion of a requested streaming file is in the memory of a shared media server.

In general, it appears that *Jackson* proposes a content delivery system in which a server is implemented with a plurality of independent engines (such as engines 1030-1070 of *Jackson's* Fig. 1) to perform independent tasks associated with serving requests, *see e.g.*, paragraphs 0085-0086 and 0166 of *Jackson*. In this manner, *Jackson* teaches that the various tasks can be performed by the independent resources of each engine, and a given engine can thus be upgraded if desired to increase its respective capacity for performing its respective tasks. Thus, the resources that are available for performing different tasks associated with serving a client request may be segregated into different engines.

Jackson appears to mention at paragraph 0133 thereof that multiple web sites may be hosted by a server, and bandwidth limits for each web site may be monitored in order to reject additional requests made to a web site when its respective bandwidth limit is exceeded. In this regard, *Jackson* appears to make some mention of managing admission of requests to a shared media server. However, in managing its admission of client requests, *Jackson* fails to teach a segment-based memory model, or using such a segment-based memory model to determine whether at least a portion of a requested streaming file is in the memory of a shared media server, as recited by claim 1.

The current Office Action asserts (in its treatment of claim 5) that *Jackson* teaches such use of a segment-based memory model at Fig. 3 and paragraphs 0096 and 0107, *see* page 4 of the Office Action. Paragraphs 0096 and 0107 of *Jackson* merely provide:

[0096] With regard to the network protocol stack, the stack in traditional systems may often be rather large. Processing the entire stack for every request across the distributed interconnect may significantly impact performance. As described herein, the protocol stack has been segmented or "split" between the network interface engine and the transport processing engine. An abbreviated version of the protocol stack is then provided across the interconnect. By utilizing this functionally split version of the protocol stack, increased bandwidth may be obtained. In this manner the communication and data flow through the content delivery system 1010 may be accelerated. The use of a distributed interconnect (for example a switch fabric) further enhances this acceleration as compared to traditional bus interconnects.

...

[0107] The embodiment of FIG. 1A contemplates that the protocol processing is shared between the transport processing engine 1050 and the network interface engine 1030. This sharing technique may be called "split protocol stack" processing. The division of tasks may be such that higher tasks in the protocol stack are assigned to the transport processor engine. For example, network interface engine 1030 may process all or some of the TCP/IP protocol stack as well as all protocols lower on the network protocol stack. Another approach could be to assign state modification intensive tasks to the transport processing engine.

The above-cited portions of *Jackson* fail to teach, in any way, a segment-based memory model, or using such a segment-based memory model to determine whether at least a portion of a requested streaming file is in the memory of a shared media server. Instead, the

above portions of *Jackson* appear to merely discuss implementing a protocol stack. Thus, the Office Action has failed to establish a proper prima facie case of anticipation regarding at least this element, as the cited portion of *Jackson* in no way teaches the element. Further, Applicant respectfully submits that no other portion of *Jackson* teaches this element.

In view of the above, Applicant respectfully requests that the rejection of claim 1 be withdrawn.

Independent Claim 11

Independent claim 11, as amended herein, recites:

A system comprising:

a media server comprising a plurality of hosting services for streaming files implemented thereon, wherein the media server comprises shared resources and wherein the plurality of hosting services share usage of the media server's shared resources in serving streaming files to their respective clients; and

an admission controller for managing admission of client requests for service to each of the plurality of hosting services to ensure that no one of the plurality of hosting services overtakes usage of an undesirably high proportion of the shared resources;

wherein said admission controller is operable to receive a new request for service of a streaming file by one of the plurality of hosting services, and determine whether the requested hosting service has sufficient available resource usage allocated thereto to service the new request; and

wherein said admission controller is further operable to determine whether acceptance of the new request will violate, at any point in the future, availability of a desired amount of usage of the shared resources for any of the plurality of hosting services. (Emphasis added).

Jackson fails to teach at least the above-emphasized element of claim 11. That is, *Jackson* fails to teach an admission controller that is operable to determine whether acceptance of a new request will violate, at any point in the future, availability of a desired amount of usage of the shared resources for any of the plurality of hosting services.

As discussed above with claim 1, *Jackson* appears to mention at paragraph 0133 thereof that multiple web sites may be hosted by a server, and bandwidth limits for each web site may be monitored in order to reject additional requests made to a web site when its respective bandwidth limit is exceeded. For instance, paragraph 0133 of *Jackson* provides:

[0133] For example, a content delivery system may contain data for two web sites. An operator of the content delivery system may guarantee one web site ("the higher quality site") higher performance or bandwidth than the other web site ("the lower quality site"), presumably in exchange for increased compensation from the higher quality site. The network interface processing engine 1030 may be utilized to determine if the bandwidth limits for the lower quality site have been exceeded and reject additional data requests related to the lower quality site. Alternatively, requests related to the lower quality site may be rejected to ensure the guaranteed performance of the higher quality site is achieved. In this manner the requests may be rejected immediately at the interface to the external network and additional resources of the content delivery system need not be utilized. In another example, storage service providers may use the content delivery system to charge content providers based on system bandwidth of downloads (as opposed to the traditional storage area based fees). For billing purposes, the network interface engine may monitor the bandwidth use related to a content provider. The network interface engine may also reject additional requests related to content from a content provider whose bandwidth limits have been exceeded. Again, in this manner the requests may be rejected immediately at the interface to the external network and additional resources of the content delivery system need not be utilized.

In this regard, *Jackson* appears to determine whether a bandwidth limit assigned for a given web site being hosted is exceeded, and if it is exceeded, then an additional request for service by such web site is rejected. While this appears to mention rejecting the acceptance of additional requests once the defined bandwidth limit for a given web site is exceeded, this fails to teach determining whether acceptance of a new request will violate, at any point in the future, availability of a desired amount of usage of the shared resources for any of the plurality of hosting services. Rather, this portion of *Jackson* appears to propose accepting new requests until a defined bandwidth is exceeded, without any consideration of whether acceptance of a given request will violate availability of a desired amount of usage of shared resources by a hosting service at some point in the future. As discussed in the present application at paragraphs 0113-0140, for example, certain instances may arise in which a request may not immediately cause a violation of availability of a desired amount of usage of shared resources (and thus would be accepted in *Jackson*), but acceptance of such request may lead to such a violation at some point in the future.

The current Office Action fails to address this element of claim 11 (originally presented in dependent claim 17), and fails to provide any explanation/identification whatsoever of a portion of *Jackson* that is believed to anticipate this element. Rather, the

current Office Action merely addresses claims 1-10, and then asserts on page 6 of the Office Action that the rejection of claims 1-10 applies fully to claims 11-38. However, this fails to address any elements of claims 11-38, such as the above-noted element of claim 11, that are not expressly found in claims 1-10. Thus, the Office Action has failed to establish a proper prima facie case of anticipation regarding at least this element of claim 11.

In view of the above, Applicant respectfully requests that the rejection of claim 11 be withdrawn.

Independent Claim 18

Independent claim 18, as amended herein, recites:

A method for managing admission of requests to hosting services that share resources, the method comprising:

allowing each of a plurality of hosting services access to any of a set of shared resources for serving their respective files to clients thereof, wherein said set of shared resources comprises memory;

for each of the plurality of hosting services, identifying a desired amount of usage of the set of shared resources to be available for the hosting service; and

isolating usage of the set of shared resources by the plurality of hosting services to ensure that the respective desired amount of usage of the set of shared resources is available to each hosting service, wherein said isolating usage of the set of shared resources comprises:

specifying, for each of the hosting services, an amount of usage of the set of shared resources to be available, at any time, to the hosting service; and

determining whether acceptance of a new request for service by a hosting service will violate, at any point in the future, availability of a specified amount of usage of the shared resources for any of the plurality of hosting services. (Emphasis added).

Jackson fails to teach at least the above-emphasized element of claim 18. That is, as discussed above with claim 11, *Jackson* fails to teach determining whether acceptance of a new request for service by a hosting service will violate, at any point in the future, availability of a specified amount of usage of the shared resources for any of the plurality of hosting services.

Further, the current Office Action fails to address this element of claim 18 (originally presented in dependent claim 22), and fails to provide any explanation/identification

whatsoever of a portion of *Jackson* that is believed to anticipate this element. Rather, the current Office Action merely addresses claims 1-10, and then asserts on page 6 of the Office Action that the rejection of claims 1-10 applies fully to claims 11-38. However, this fails to address any elements of claims 11-38, such as the above-noted element of claim 18, that are not expressly found in claims 1-10. Thus, the Office Action has failed to establish a proper *prima facie* case of anticipation regarding at least this element of claim 18.

In view of the above, Applicant respectfully requests that the rejection of claim 18 be withdrawn.

Independent Claim 23

Independent claim 23, as amended herein, recites:

A method for managing admission of requests to a hosting service, the method comprising:

allowing each of a plurality of hosting services access to any of a set of shared resources for serving their respective files to clients thereof;

for each of the hosting services, identifying a desired amount of usage of the set of shared resources to be available for the hosting service;

receiving a new request for a streaming file to be served by one of the hosting services;

determining, based at least in part on a modeled memory state of the shared resources, a cost to the one of the hosting services for serving the requested streaming file, wherein the cost corresponds to the shared resources to be consumed in serving the requested streaming file; and

determining, based at least in part on the cost, whether to admit the new request for service by the one of the hosting services. (Emphasis added).

Jackson fails to teach at least the above-emphasized elements of claim 23. For instance, *Jackson* fails to teach a modeled memory state of the shared resources, and thus fails to teach determining a cost to a hosting service for serving a requested streaming file based at least in part on such a modeled memory state. Thus, for at least this reason, Applicant respectfully requests that the rejection of claim 23 be withdrawn.

Independent Claim 28

Independent claim 28 recites:

A method comprising:
allowing each of a plurality of hosting services access to any of a set of shared resources for serving their respective files to clients thereof, wherein the shared resources includes a memory;
receiving, at a time T_{cur} , a new request for a streaming file to be served by one of the hosting services;
creating a segment-based model of the memory as of time T_{cur} ; and
based at least in part on the segment-based model of the memory,
determining whether to accept the received request for service by the hosting service. (Emphasis added).

Jackson fails to teach at least the above-emphasized elements of claim 28. As discussed above with claim 1, *Jackson* fails to teach a segment-based model of memory. As such, *Jackson* also fails to teach determining, based at least in part on such a segment-based model of memory, whether to accept a received request for service by a hosting service. Thus, for at least this reason, Applicant respectfully requests that the rejection of claim 28 be withdrawn.

Independent Claim 32

Independent claim 32 recites:

Software code stored to a computer-readable medium, which when executed causes a computer to perform a method comprising:
creating a segment-based model of a media server's memory, wherein the media server's memory is a shared resource to which a plurality of hosting services implemented on the media server have access for serving their respective files to clients thereof; and
determining whether to serve a requested streaming file from one of the plurality of hosting services based at least in part on the segment-based model of the media server's memory. (Emphasis added).

Jackson fails to teach at least the above-emphasized elements of claim 32. As discussed above with claim 1, *Jackson* fails to teach a segment-based model of memory. As such, *Jackson* also fails to teach determining, based at least in part on such a segment-based model of memory, whether to serve a requested streaming file from one of the plurality of

hosting services. Thus, for at least this reason, Applicant respectfully requests that the rejection of claim 32 be withdrawn.

Independent Claim 36

Independent claim 36 recites:

An admission controller for managing admission of requests to hosting services that share resources, the admission controller comprising:

means for receiving a new request for a streaming file to be served by one of a plurality of hosting services that share access to a set of shared resources for serving their respective files to clients thereof;

means for performing a resource availability check for the one of a plurality of hosting services from which the streaming file is requested by the new request to determine whether the requested hosting service has sufficient available resource usage allocated thereto to service the new request; and

means for performing performance isolation guarantee check for the plurality of hosting services to determine whether acceptance of the new request will violate, at any point in the future, availability of a desired amount of usage of the shared resources for any of the plurality of hosting services.
(Emphasis added).

Jackson fails to teach at least the above-emphasized element of claim 36. That is, as discussed above with claim 11, *Jackson* fails to teach determining whether acceptance of a new request will violate, at any point in the future, availability of a desired amount of usage of the shared resources for any of the plurality of hosting services.

Further, the current Office Action fails to address this element of claim 36, and fails to provide any explanation/identification whatsoever of a portion of *Jackson* that is believed to anticipate this element. Rather, the current Office Action merely addresses claims 1-10, and then asserts on page 6 of the Office Action that the rejection of claims 1-10 applies fully to claims 11-38. However, this fails to address any elements of claims 11-38, such as the above-noted element of claim 36, that are not expressly found in claims 1-10. Thus, the Office Action has failed to establish a proper prima facie case of anticipation regarding at least this element of claim 36.

In view of the above, Applicant respectfully requests that the rejection of claim 36 be withdrawn.

Dependent Claims

Each of dependent claims 2-4, 6-10, 12-14, 16, 19-21, 24-27, 29-31, 33-35, and 37-38 depends, either directly or indirectly, from one of independent claims 1, 11, 18, 23, 28, 32, and 36 (and thus inherits all limitations of its respective independent claim). In view of the above, Applicant respectfully submits that independent claims 1, 11, 18, 23, 28, 32, and 36 are of patentable merit. It is respectfully submitted that dependent claims 2-4, 6-10, 12-14, 16, 19-21, 24-27, 29-31, 33-35, and 37-38 are allowable at least because of their dependency from their respective independent claims for the reasons discussed above.

VI. Newly Added Claim

Claim 39 is added herein, which depends from independent claim 23, and is thus believed to be patentable over *Jackson* for at least the reasons discussed above with claim 23. Claim 39 further recites “wherein said determining said cost, based at least in part on a modeled memory state of the shared resources, comprises: determining, based at least in part on a segment-based model of memory of the shared resources.” Support for this element can be found in the originally-filed claims and the specification. Further, *Jackson* fails to teach any such segment-based model of memory, and thus claim 39 is further allowable over *Jackson* based on its further-recited element.

VII. Conclusion

In view of the above, Applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-2025, under Order No. 200311047-1 from which the undersigned is authorized to draw.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is e-filed on the date shown below.

Dated: April 13, 2007

Signature: Donna Forbit
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Respectfully submitted,

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